

SHORT COMMUNICATIONS

***Bryophyllum delagoense* (Crassulaceae): a new weed for Western Australia and a potentially serious problem for the Abrolhos Islands**

Western Australia has a large number of offshore islands, generally with simple plant communities subject to a high level of natural and artificial disturbance, which enables weeds to become readily established. Weeds are major threats to the biological values of these islands (Keighery 1993). This report details the discovery of a potentially serious weed, Mother of Millions (*Bryophyllum delagoense* (Eckl. & Zeyh.) Schinz), located during biological surveys of the Abrolhos Islands during 1999.

Bryophyllum Salisb. (Crassulaceae) is a genus of c. 35 species of erect succulent perennial herbs or woody shrubs from Africa and Madagascar. Members of this genus were previously included in *Kalanchoe* Adans., a genus of c. 100 species mainly occurring in Africa and Asia but with one species in North America.

Previous records in Australia

Eleven species of Crassulaceae have been recorded as naturalized in Western Australia (Keighery 1999) but these did not include any *Bryophyllum* species. However, five species and a hybrid of *Bryophyllum* have been recorded as naturalized in eastern Australia (Harden 1990, Henderson 1997 and Hnatiuk 1990). These include *Bryophyllum delagoense*, which has often been known by a synonymous name *B. tubiflorum* Harv., and is commonly known as Mother of Millions, Mission Bells or Christmas Bells. The other naturalized taxa are *Bryophyllum daigremontianum* (Raym.-Hamet & H. Perrier) A. Berger, *B. fedtschenkoi* Raym.-Hamet & H. Perrier, *B. pinnatum* (Lam.) Oken (Live or Resurrection Plant), *B. proliferum* Bowie and the hybrid, *B. daigremontianum* x *B. delagoense* (Devil's Backbone or Mother of Millions). This hybrid arose in gardens as it is not known in the wild and is only known as a weed in Australia.

Bryophyllum delagoense, *B. pinnatum* and the hybrid (*B. daigremontianum* x *B. delagoense*) are recorded as weeds of coastal areas in New South Wales and Queensland invading coastal dunes, open bushland, estuaries and heathlands (Armstrong & Swarbrick 1983, Batianoff & Franks 1997, 1998). These taxa are described and illustrated in Armstrong & Swarbrick (1983). The other species are minor weeds of the same areas, spreading from dumped garden refuse. On offshore islands in Queensland *Bryophyllum* species can form monospecific stands, especially where the soil is enriched and disturbed by nesting seabirds (Keighery, unpubl.).

New record in Western Australia

During the 1999 survey of the Abrolhos Islands very dense stands of *Bryophyllum delagoense* were located covering over half of Rat and Pigeon Islands. These populations comprised several thousand plants. Both of these islands are inhabited by fishermen during the crayfishing season and the weed was probably introduced as a garden plant. It is possible that smaller infestations are present on other inhabited islands.

This species is a drought-resistant poisonous succulent capable of rapid spread as it produces abundant seed and also reproduces vegetatively through epiphyllous buds on the leaf margins. It appears to have been introduced relatively recently as it was not reported from either island in biological surveys carried out approximately 20 years ago, although weed species may not have been fully recorded then.

The species appears to be replacing the natural low shrublands present on the islands, probably aided by natural disturbance by nesting seabirds that kill plants and enrich the soil through their guano and nests. This allows the weed to build up dense stands that halt the natural cycle of regeneration after the bird colony has moved on. The poisonous nature of the plant limits predation by native herbivores and could be a serious problem on nearby islands with rare Tammar Wallaby populations if the weed spreads there.

Recommendations

Hand pulling is the recommended method of control for this species. However, care must be taken to ensure the whole plant is removed as vegetative material (especially leaves) can re-establish. Plants should be bagged for removal or burnt on site. Chemical control using 2,4-D (0.2% at flowering time) has been recommended in the past, but currently AF-300-acid is used (Kleinschmidt 1991).

Bryophyllum delagoense is a significant weed of coastal areas and offshore islands in Eastern Australia and has the potential to become a major weed in similar habitats of Western Australia. Because of the increasing usage of the Abrolhos Islands by tourists, there is ample opportunity for this species to spread more widely on the islands and possibly also to the mainland. Eradication of the still localized infestations of this species is possible and highly desirable and is an aim of the management plan for the Abrolhos Islands currently being prepared.

Acknowledgements

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